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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

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December 3, 1991

87-268

Ms. Donna R. Searcy  
Secretary  
Federal Communications Commission  
1919 M Street, N.W.  
Washington, D.C. 20554

Dear Ms. Searcy:

There is submitted herewith on behalf of Isaac Blonder an original and nine copies of comments to be filed in the HDTV proceedings, Docket No. 87-268, for such consideration as the Commission deems appropriate.

It is believed that the comments apply to the basic questions raised in the proceedings, and that the acceptance thereof will not disadvantage any of the other participants, and will provide a further voice for the consideration by the Commission in taking whatever action it decides to take.

The attention of the Commission is invited to the fact that Mr. Blonder will receive no personal gain from the filing of this document, and that his participation in this and in other FCC proceedings, are primarily pro bono in nature and are an attempt to be of such assistance as his prior experience in the communications field, and as his past and current experience as a participant in various proceedings may provide.

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**HDTV 3DTV**  
**BLONDER BROADCASTING CORP.**

Isaac S. Blonder-----9 Beaver Hill Rd., Morganville, N. J.----(908) 946-2447

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**Design parameters for an affordable next generation TV system.**

The march of time and technology has made it quite apparent that our old faithful workhorse, NTSC broadcast, will be rendered redundant by new methods of delivering higher quality pictures to the home. An international maelstrom of engineers and entrepreneurs is spewing out daily improvements in the science of television. But, is anyone watching the cash register? Current price projections for the proposed HDTV receivers (try and find one under \$3000) may unleash an unfortunate stratification of the audience, based upon family income, that could deny important educational and current event programs to a majority of our population.

DBS, MMDS, Cable and Telco qualify as common carriers and are usually exempt from conforming to the standards set for broadcast TV. Thus, these alternative entertainment delivery systems may adopt any standards for TV they find effective in persuading the home viewer to abandon watching the free broadcast stations. Not only can they initiate superior quality TV systems, but they could also engage in a sales mode, not yet in vogue, where the TV receiver (monitor) would be leased on a monthly basis.

The potent combination of leased HDTV receivers, and the flood of entertainment channels available on the alternate delivery systems, will reduce the number of broadcast viewers, resulting in a reduction in advertising income, and inevitably, bankruptcy for the free broadcasting world.

Now, in order to preserve the current, cost effective, terrestrial broadcasting system, the FCC, in my opinion, should procede according to the following guidelines.

1. The winner should deliver the most picture for the lowest cost (I would pick a little less resolution if it came for a lot less money). Conversion of digital HDTV to NTSC at a nominal price is likely to be the most important feature of the winning technology. The next most important feature of the digital compression system is its ability to survive terrestrial artifacts and provide at least the same coverage as NTSC. It is unfortunate that ATTC will not measure the terrestrial qualities of each proponent, since no other property is as vital to the financial health of the broadcasters.

2. The aspect ratio should remain at 4-3, solely because of the excessive price to be paid in the display for an imaginary ( lots of studies now say so) improvement in viewing pleasure.

3. The additional charge for decoding HDTV into NTSC should not only be small, but all new TV receivers should possess this capability in the same way the UHF tuner is mandated. It is of extreme importance to the survival of broadcast TV, that the multiple NTSC channels made available by compression (four or more), result in a lower per channel cost to the broadcaster and the viewer.

4. The shift to digital sound, which is projected to cost no more than analog stereo, should not be burdened with any added features such as surround sound. It is my

personal opinion that only a minuscule number of homes now use detached speakers to enhance the stereo effect. The importance of stereo sound has been fantasied beyond reality.

5. The digital compression format is ideal for scrambling. There is no reason why the free broadcast station should not sell one of his channels on a pay per view basis, while still providing free programming on the other three, thus improving his ability to withstand the competition from his common carrier competitors.

6. It is a psychophysical fact that the home viewer, seated at a normal distance from the typical 20 inch TV, cannot appreciate the increased resolution afforded by HDTV. Perhaps, in the dim future (10 years), when HDTV receivers approach NTSC prices, the free station could resort occasionally to the HDTV format, if the advertiser can afford the tab.

7. The digital HDTV systems being tested by the Advanced Television Test Center are each generally believed to be capable of carrying 4 simultaneous NTSC signals on a single 6 MHz channel. It is my belief that the current TV broadcast spectrum should be gradually converted to an all digital scheme in which every station is able to transmit four programs. Owing to the lower power needed for the same market coverage; the taboos may also be lowered, and it appears that the existing UHF spectrum can be invaded to double the number of broadcast stations in every major market. The new stations would be digital only, and financially feasible as soon as adequate numbers of low cost converters to NTSC become available. Thus, when all the broadcast stations eventually go digital, forty-eight over the air programs could be available in the major markets throughout the nation. It may be useful to parallel the conversion of NTSC to digital, with the prior experience in color and UHF. The time span measured about ten years, for the price and performance of those two new services to be acceptable to the general public. The standard NTSC TV receiver can survive indefinitely with an external converter that turns the digital signal into four NTSC programs. Rest assured that the price of a new TV, loaded with all the tricks of the new TV system, will become affordable within ten years.

The legal battle over patents and royalties may be a greater barrier to the new HDTV service than the technology battle. I hope to suggest here, a new approach to the use by the FCC, and perhaps other government agencies, of privately funded inventions. Instead of relying upon the private sector to form study groups and committees, the FCC's own staff should make the selection of the winning technology, after giving the proponents a decent time to make their case. The Constitution gives the Patent Office the power to award exclusive rights to the inventor for a period of time, and the ability to charge whatever the market will bear. In the case of a public use such as TV, I believe that the FCC can take on some of the mantle of the Patent Office, and not only declare who is the inventor but, because of the monopoly nature of the award, set the royalties. I suggest that 1% of the gross income of the stations go into the patent pool, and 3% of the sales price of the transmitting equipment and receivers also go to the patent pool. The FCC will award shares of the pool according to the importance of the inventor's contribution to the HDTV system. The license period will be 20 years instead of 17 because of the slow introduction of a new TV system. There are bound to be legal challenges to the validity of the inventions, but at least the new TV world will have been launched without delay.

A close cousin to the patent pool suggested in the previous paragraph, is the cable

compulsory copyright license instituted by Congress in the Copyright Act of 1976.

Finally, we have to face the fact that the US is no longer the sole and dominant source of high tech products. In my 40 years as an electronics manufacturer, I witnessed the rise and fall of my industry. Now serving as the USNC Technical Advisor to the IEC 12g (Cable) and 12c(Broadcasting), I observed how each country protects its technology and industry. In our country's own self interest, I propose that the FCC take the following steps; declare that a new TV product is rated "American manufactured" only if the US content is over 75%, items with less US parts or imported, incur a tariff of 10%. This proposal will, of course, raise the price of the new TV system to the public, but it will provide the necessary capital to fund research laboratories, and I have faith that we will have a better and more affordable TV industry in the future.

Respectfully submitted,

*Isaac S. Blonder*

Isaac S. Blonder

87-268

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## Biography

**Isaac S. Blonder**

9 Beaver Hill Road, Morganville, N.J. 07751, (201) 946 2447

b. NYC, June 24, 1916

1938, U. Conn., B. S. Physics, High Honors.

1940, U. Cornell, M. S. Physics.

1941-6, U. S. Signal Corps, Radar Officer.

1946-7, Panoramic Radio Corp, N.Y.C., Engineer.

1947-8, City College, N.Y.C., Engineering Physics Instructor.

1948-50, TV Manufacturer, Teleking Corp, N.Y.C., engineer.

1950-89, Chairman of the Board, Blonder Tongue Labs Inc., N.J. manufacturer of TV cameras, monitors, antennas, STV, CATV, MATV amplifiers, modulators.

1964-70, Director, WNJU-TV Channel 47, Newark-NYC.

1964-72, President, Com-CableTV Inc., Multiple CATV operator (MSO).

1972-76, President, WBTB-TV Channel 68, Newark-NYC.

1972-89, Director, United Jersey Bank/Mid-State.

1979-82, Stockholder, WQTV, Channel 68, Boston, Ma.

1982-89, Director, WNUV-TV, channel 54, Baltimore, Md.

1988 - -, President, Blonder Broadcasting Corp., Experimental TV channels WEXP-TV 27,28 Hoboken, N.J.

1988 - -, Stevens Institute of Technology, special assistant to the president on HDTV.

35 patents. Includes: First STV broadcast system, Outdoors addressable scrambled cable pay TV system, Asymmetrical Yagi antennas.

Life member, IEEE. Member, SMPTE. Member, SCTE.

Member/Observer - NCTA engineering committee, EIA broadband communications study, EIA TV tuner committee, EIA land-mobile committee, EIA satellite committee, EIA engineering policy committee, EIA engineering education committee, FCC TV stereo sound committee (BTSC), SMPTE working group on Stereoscopic TV.

Member, CAB committee, 1962-66, chaired by Commissioner Bob Lee to encourage UHF TV broadcasting.

Member, FCC Cable Technical Advisory Committee (CTAC), chaired by commissioner Jim Quello, to recommend technical standards for CATV.

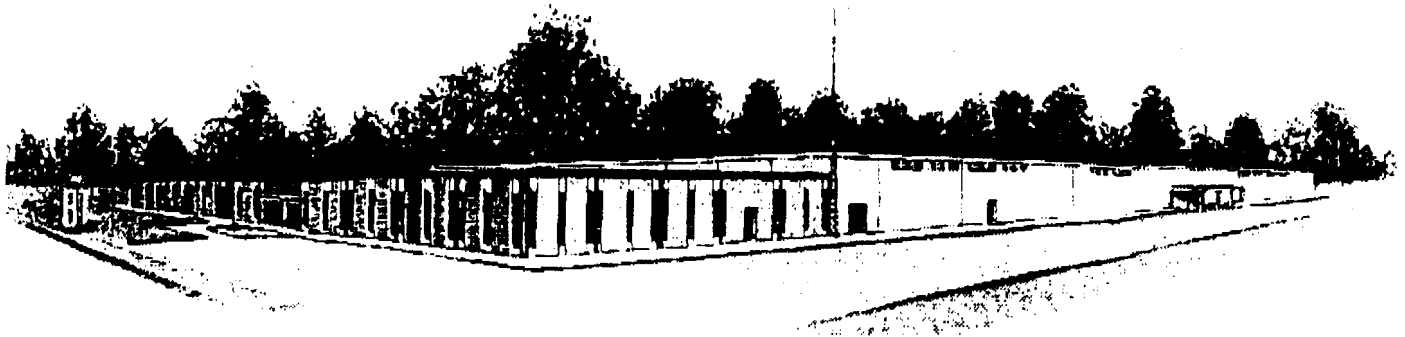
USNC Technical Advisor (TA) to the International Electrotechnical Commission sub committees 12G, cable distribution, and 12C, broadcasting.

Low Power TV Association Distinguished Service Award, 1983.

Lewis Wolfson Memorial Award for services to the STV industry, 1980.



**BLONDER-TONGUE** LABORATORIES  
INCORPORATED  
OLD BRIDGE, NEW JERSEY 08857



## A BRIEF HISTORY OF BLONDER-TONGUE

Blonder-Tongue Laboratories was co-founded on May 18, 1950 by Ben H. Tongue and Isaac (Ike) S. Blonder. Mr. Tongue, at the age of 23, had already become Chief Engineer of a major electronic manufacturing concern. Mr. Blonder, a physicist by training, was the Quality Control Engineer for the same company. Both men, deeply interested in the then infant television industry, saw a need for an inexpensive broadband amplifier to boost weak TV signals and improve fringe area reception.

Confident that they could create a product to fill the need, they left their jobs to design and build such an amplifier. With an initial capitalization of \$5,000 and no other source of income, they set to work designing and experimenting in a tiny loft in Yonkers, New York and shortly thereafter marketed the first commercially successful broadband TV booster amplifier, the HA-1-L.

A growing staff quickly outgrew the cramped quarters and the operation was moved to a larger building in Mt. Vernon, New York. There, between late 1950 and 1952, the company developed a national sales organization and introduced new and uniquely designed single channel and broadband

amplifiers like the CA-1, MA-4, CS-1, and DA-8. During this period Blonder-Tongue also began the accumulation of patents that have since become hallmarks in the field of TV signal distribution design.

By 1952 more space was needed and the rapidly growing company again moved, this time to Westfield, New Jersey. The introduction of the BTU-2, UHF to VHF TV channel converter in 1953 marked Blonder-Tongue's growing participation in the home entertainment market. The BTU-2 and subsequent models of similar design were hugely successful and soon became the industry's standard. During the time the company was headquartered in Westfield, it became a recognized leader in the field of master antenna (MATV) system design and became a major supplier of MATV equipment. An ongoing program of research into the market potential, and engineering requirements of pay-television was established in 1953.

The company again outgrew its quarters, and in 1955 an additional 23,000 square feet of production space was acquired in Newark, New Jersey. By 1957 the entire company had moved to Newark where it occupied five separate buildings. Blonder-Tongue had by

then become: the largest U.S. producer of UHF converters, the largest producer of MATV equipment, and, of course, a principal holder of patents in its field. The company was also the largest producer of closed circuit (CCTV) television cameras, and in 1960 introduced the first all solid-state vidicon camera.

The year 1960 also saw the introduction of the first fully transistorized broadband TV amplifier by Blonder-Tongue. A revolutionary new VHF amplifier feedback circuit, designed and later patented by Ben Tongue, greatly facilitated the use of transistors to amplify the wide band of frequencies used in the television spectrum.

In 1962 the firm was awarded another important patent; one that described a system for the simultaneous transmission of pay-TV program with a free broadcast program. Thus, while maintaining its leadership in the MATV and CCTV fields, Blonder-Tongue continued its research and development in the field of pay-television.

In 1970 the production, research, and administrative divisions of the company were combined under a single roof in a new 130,000 square foot building in Old Bridge, New Jersey. The decision to regroup and consolidate proved fruitful; the company has prospered since moving to Old Bridge. Not only has productivity increased, a new and expanding product line has been developed and is being marketed from coast to coast.

Shortly after the move to Old Bridge, a major commitment was made to development of a workable pay-TV system. In July of 1971, the FCC approved Blonder-Tongue's system 4745 for subscription TV service. BTVision, Inc., a subsidiary of Blonder-Tongue Laboratories, Inc., holds the exclusive rights to this system. In 1972 the station rights for Channel 68 in Newark, New

Jersey were acquired and the call letters WBTB-TV were assigned in 1973 and broadcasting began the following year-the first Subscription TV station in the country. This segment of B-T's operations was sold in part to Wometco Enterprises in 1977 for STV programming and the company has directed its technical resources to expanding its BTVision product development and research. This has resulted in the introduction of new and improved STV decoders, encoders, antennas, signal boosters and related components for the BTVision system to meet the requirements of individual STV stations. Foremost among our NEW GENERATION STV hardware is the Addressable Decoder system.

In committing a major portion of our resources to subscription TV, a complete, new, manufacturing facility devoted exclusively to STV product production was built in nearby Lakewood, New Jersey and put into operation in Nov. 1979. This ultramodern, 41,000 sq. ft. single level plant features the latest equipment and manufacturing techniques in the industry. Production Engineering, Quality Control and all other direct manufacturing support is located at this site. Blonder-Tongue has also established a central warehouse facility in Freehold, New Jersey exclusively for bulk storage of packaging materials and components.

While Pay-television promises to be one of the most exciting (and potentially most lucrative) areas of endeavor for Blonder-Tongue Laboratories, the company is however, continuing to provide the leadership in the MATV field that its customers have come to expect. Innovative engineering, quality production, aggressive marketing, and effective management are traditional at Blonder-Tongue. They form a firm foundation for its future growth and are the basis for expanding opportunities for its employees.

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON 25, D. C.

20554

June 23, 1965

IN REPLY REFER TO:

Isaac S. Blonder,  
Chairman of the Board  
Blonder-Tongue Laboratories, Inc.  
9 Alling Street  
Newark 2, New Jersey

Dear Ike:

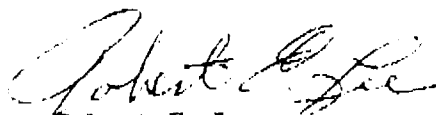
In behalf of the Chairman and my fellow Commissioners, I want to thank you for your dedicated service to the Committee for the Full Development of All-Channel Broadcasting.

The technical group has made a valuable contribution to the art of UHF broadcasting and deserves the appreciation of all of industry and the general public.

The work of this committee can be considered to be one of the finest examples of government and industry cooperation that could be envisioned. I hope you will be pleased with the enclosed report.

You have my sincere gratitude.

Sincerely,

  
Robert E. Lee  
Commissioner



FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

November 24, 1975

OFFICE OF COMMISSIONER  
JAMES H. QUELLO

Mr. Isaac S. Blonder  
Blonder-Tongue Laboratories, Inc.  
One Jake Brown Road  
Old Bridge, New Jersey 08857

Dear Mr. Blonder:

I am pleased to take this opportunity to thank you individually for the advice and background material on cable television technology which you have provided to the Commission through the Cable Technical Advisory Committee. As Chairman of the Committee, I convey to you the warmest appreciation of Chairman Wiley, my fellow Commissioners, and the FCC staff for the many hours you spent attending and contributing to meetings of CTAC and its Panels, and for the careful and serious thought you dedicated to this effort.

We are convinced that only on the basis of a well considered set of technical standards will the broadband communications industry reach its full maturity and be able to provide the services the technology promises. Such standards will assure the safety of persons and property; assure the compatibility of cable systems, receivers, and transmission networks; and give both the buyer and seller of cable services a standard against which to measure the quality of services provided. We have already begun to consider how the material presented by CTAC can be used to create these necessary standards.

Enclosed is a complimentary copy of the Final Report of the Steering Committee, which constitutes the Summary (Volume I) of the full CTAC Report. The second volume, including the reports of each of the CTAC Panels, will be available in the near future from the National Technical Information Service, U. S. Department of Commerce.

Again, thank you for your personal contribution to the deliberations of the Cable Technical Advisory Committee.

Sincerely,

  
James H. Quello

Enclosure

Ms. Donna R. Searcy  
Page Two  
December 3, 1991

Should there be any questions relating to this submission,  
please communicate with the undersigned.

Sincerely,

  
BENITO GAGUINE

BG/amc

Enclosure

cc: Chairman Alfred C. Sikes  
Commissioner James H. Quello  
Commissioner Sherrie P. Marshall  
Commissioner Andrew C. Barrett  
Commissioner Ervin S. Duggan  
Mr. Edward O. Fritts, President, N.A.B.  
Richard Wiley, Esquire  
Congressman Edward Markey